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ABSTRACT

The study summarizes discussions and conclusions of the Regional Workshop on Monitoring and Evaluation of Rural Development Projects in East Africa (Nairobi, Kenya, April 1979), whose purpose was to share lessons learned from field experiences in managing information for rural development. An initial section summarizes information in papers submitted and conclusions reached by participants. The introduction notes previous World Bank workshops on monitoring and evaluation (M&E) and identifies areas of concern: management's need for and use of information from M&E systems; issues relating to collecting, processing, analysis, and presentation of information; and organization of M&E units. The section on management's need for information contains subsections on information consumers, information managers want, information needs, impact of availability of information on decision-making, and alternative methods of M&E. Another section covers experiences with information systems, under headings of data collection, data processing and analysis, and presentation of M&E results. A final section, on organization of M&E units, discusses location, strategies for institution-building, formation and structure of M&E units, staffing and training, human and motivational factors, and costs of M&E. Appendices present the text of the opening address; lists of participants, papers submitted, and 35 selected references; and a summary of basic concepts on M&E. (MH)

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World Bank Staff Working Paper No. 379

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WORLD BANK

Staff Working Paper No. 379

March 1980

MANAGING INFORMATION FOR RURAL DEVELOPMENT: LESSONS FROM EASTERN AFRICA

This study summarizes the discussions and principal conclusions of the Regional Workshop on Monitoring and Evaluation of Rural Development Projects in Eastern Africa held in Nairobi in April 1979. The basic purpose of the Workshop was to provide a forum for extracting lessons from field experiences with managing information for rural development.

Approaches taken to promoting rural development in Eastern Africa reflect an enormous diversity across a wide spectrum -- from area and sector development projects to comprehensive national rural development programs. All these approaches share the pressing need for access to better and more appropriate information to serve the needs of the relevant user-groups: project managers and planners, government ministries and authorities and the funding agencies. This paper draws on over a decade of experience with efforts to provide such information through project monitoring and evaluation systems in Eastern Africa.

The methodologies for monitoring and evaluating the technical, economic, and social impacts of rural development projects have undergone considerable development and modification in Eastern Africa. The lessons which may be learned from the wealth of practical experience in the region relate to a large number of issues currently being raised in projects elsewhere: identification of priority users of information; the type and frequency of data collection efforts; problems of translating raw data into useful information; location and staffing of monitoring and evaluation units; the resource requirements of implementing project information systems; training needs; and the effective management of rapidly growing volumes of information on rural development projects.

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SUMMARY AND CONCLUSIONS

Management of information for rural development is increasingly important in achieving the goals of poverty alleviation. Over the last decade, efforts for alleviating poverty have often been hampered by scarcity of resources, conflicts among objectives, uncertainty about technological packages, weak administrative structures, and incomplete knowledge about the actual effects of different policies on the people they are meant to benefit. Moreover, there is frequently a lack of both clearly defined objectives and realistic implementation schedules.

To make more progress towards alleviating poverty, it is essential that objectives of rural development efforts be defined so that governments can monitor them regularly and evaluate their effects and impact.

The design and implementation of information systems to monitor and evaluate rural development efforts require considerable creativity. This paper draws on over a decade of experience with project monitoring and evaluation (M&E) systems in Eastern Africa. It is based on the Regional Workshop on Monitoring and Evaluation of Rural Development Projects, held in Nairobi in April 1979. The basic purpose of this Workshop was to extract lessons from these experiences with managing information in some twenty Bank-supported rural development projects in Eastern Africa.

The methodologies for monitoring and evaluating the technical, economic, and social impacts of rural development projects have undergone considerable development and modification in Eastern Africa. The lessons which may be learned from the wealth of practical experience in the region relate to a large number of issues currently being raised in projects elsewhere.

The primary consideration in determining the overall purpose of M&E should be who will use the information and to whose benefit. Workshop participants suggested a hierarchy of users, with project-level users ranking highest in priority, national- or regional-level users intermediate, and donor agencies lowest. Collection of data -- in whatever form -- without the prior and unambiguous identification of the users is a dubious undertaking.

Many of the data required for monitoring are part of the regular reporting requirements of the agencies involved in the implementation of rural development projects. The data required for evaluation are often collected through fields visits, informal interviews, direct measurements, surveys, and the like.

The experience from several rural development projects in Eastern Africa indicates that both longitudinal and cross-sectional data need to be combined to produce effective feedback. The major problem of evaluations of both types (longitudinal and cross-sectional) is that exogenous factors

besides project inputs and participation often influence indicators of production and income. It is therefore difficult to separate out project-induced income changes from changes which were caused by non-project influences. Separating out non-project influences is one of the main jobs of an evaluation survey design.

The most common instruments for gathering data are questionnaires. Some simple, commonsense rules about the use of questionnaires need to be emphasized. Questionnaires should be simple and brief; they should normally not require more than one to one-and-a-half hours to be completed; they should only include questions for which the use and role in the analysis have been established; and they should be reviewed and amended after a field pretest.

The most commonly applied sampling technique described in the papers submitted for the Regional Workshop consisted of two-stage stratified random sampling. The primary sampling units are usually geographical areas, limited by specific boundaries or clusters. Second stage sampling then consists of a random selection of project participants, or households within each primary sampling unit.

Probably the most difficult -- if not controversial -- issue in M&E is the measurement of yields. Some argued for the measurement of "stock" variables (e.g., inventories) rather than "flow" variables such as expenditures, income, and yields. Only one paper submitted for the Workshop discussed a method for yield measurements.

To collect data through surveys requires teams of enumerators and supervisors. Appropriate enumerator/supervisor ratios recommended by Workshop participants ranged from 4:1 to 6:1. Field experience shows that in-service training of both the enumerators and the supervisors is vitally important to ensure quality of the field data and survey success. Time spent by the evaluation officer on enumerator and supervisor training more than pays off in time saved in subsequent editing and checking of the data. A one to two week training of all enumerators and supervisors engaged for data collection is highly recommended.

Large sample sizes and detailed questionnaires often cause delays in data processing and analysis. Other pitfalls experienced in the data processing are lack of planning, lack of funds, poor distribution of resources between collection and processing/analysis, and unrealistic deadlines for the production of evaluation reports. Experience indicates that in general the effective availability of computer services is overestimated and the requirements for the processing of data are grossly underestimated. Workshop participants recommended that field-level data checking is extremely important in order to reduce errors and time spent on data editing; the choice between manual or electronic data processing is not a mutually exclusive one (some initial analysis of key indicators might best be done manually while full analysis of the data may require programable calculators, or a micro-computer).

The effectiveness of M&E systems is also critically determined by the presentation and timely availability of M&E results. Monitoring and evaluation results need to be communicated actively and presented in a way project managers can understand. Project managers should receive the full evaluation report as a source document, as well as a two to three page summary that is issue- and problem-oriented and prepared for more general distribution. At higher levels of management more summarized information should be made available.

The discussion of the institutional aspects of M&E focused on the trade-offs between creating an in-house capability versus relying on outside resources. The Workshop participants agreed in large measure that creating an in-house M&E capability is preferable to the temporary use of consultants not associated with the project. Outside consultants, however, have definite advantages in some aspects of M&E work.

The specific location of such an in-house capability may be either at the project level or at the central or regional level. Whichever institutional strategy is selected for evaluation work, it was agreed that the monitoring function should be physically located and carried out at the project level.

A central evaluation unit should provide methodological support for design and execution of surveys, for in-depth analysis of information generated at project level, and for the use of efficient data-processing procedures. It should also facilitate the transfer of experience, and undertake quality control.

Central evaluation units have definite responsibilities vis-a-vis planning and government policy-making bodies for providing comparison across projects and extracting general findings and lessons. In Malawi, for example, nearly twelve years of experience with the project-based units has resulted not only in a gradual strengthening of their internal capabilities but also in the establishment of a central unit to provide technical support. Most participants seemed to agree that institution-building strategies in the field of M&E should give preference to a two-tiered strategy, with a centrally located evaluation unit linked to a network of decentralized, project-based M&E cells.

Staffing of M&E units is a severe problem. Few individuals at either the national or international levels have relevant background in the design and operation of project information systems. Those who do, are often unwilling to return to work at the project level. The continuity so essential to effective M&E is consequently hard to maintain.

While there is general agreement on the urgency and justification for investment in training M&E staff, Workshop participants voiced strong concern about the risks of losing better-trained staff to the private sector or elsewhere. Rates of attrition seemed to be highest where there was no possible career prospect for those receiving training in M&E. Where staff

were on permanent appointments, where they were given a feeling of professional involvement, and where there were further prospects -- perhaps of "graduating" to a statistical bureau, census office, or to project administration -- the rates of staff turnover were far lower and there was less need for repetitive training.

The Workshop participants repeatedly emphasized the human dimensions of M&E in the rural development projects. Their experiences show that many of the day-to-day problems of operating project information systems can be easily overcome or avoided altogether if that rare individual -- the right person -- is in the job.

The general consensus of the participants in the Nairobi Workshop was that "this workshop was extremely useful from the point of view of an exchange of experiences within (Eastern Africa) Region. Similar workshops, perhaps on a more specific basis, may lead to improve monitoring and evaluation designs." (John Doughty)

Deliberations on this workshop have special significance in two respects. First, monitoring and/or evaluation are increasingly being recognized as the principal means of eliciting information on the extent to which poverty orientation objectives of rural development projects are being achieved. Second, as most rural development projects seek to increase productivity and income of small and marginal farmers, issues discussed and lessons derived from the workshop have a wider application for projects in the agriculture sector; particularly because of growing emphasis on income distributive impact of all agricultural projects.

Monitoring and evaluation of rural development projects is a sensitive issue since it can demonstrate either the success or failure of projects. Unless the objectives and methods are clearly defined, there is a danger of biased results. For this reason, M&E is often viewed with suspicion or even antagonism. The design and implementation of information systems for rural development is consequently a great challenge for the new development decade.

CHAPTER I

INTRODUCTION

A progress report, prepared in March 1976, highlighted the rapid growth of monitoring and/or evaluation[1/] components in agriculture and rural development projects. It concluded that monitoring of rural development projects is one of the principal sources of information related to the improvement of our knowledge and understanding of poverty issues. 2/

An in-depth analysis of several monitoring and/or evaluation (M&E) systems included in earlier rural development projects showed that some of these had overambitious terms of reference; that M&E units suffered from late establishment, lack of continuous staffing, and analytical capability. 3/

In December 1976 the World Bank organized the first international workshop on "Monitoring and Evaluation of Rural Development Projects" in Copenhagen. Some 30 experts from various multilateral and bilateral agencies

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1/ Although monitoring and evaluation are often linked they refer to quite separate activities. Basic differences between monitoring and evaluation are discussed in the annex 2.

2/ RORSU. "Issues in Monitoring and Evaluation of Rural Development Projects: A Progress Report." March 1976 (mimeo).

3/ RORSU. "Case Studies of Monitoring and Ongoing Evaluation Systems for Rural Development Projects." November 12, 1976 (mimeo).

recommended in the summary report of that workshop 1/ that a clear identification of a "hierarchy of objectives" is crucial for M&E, and urged donor agencies and recipient countries to develop a improved methodologies for the establishment of M&E systems.

In follow-up to the workshop in Copenhagen, OECD organized in March 1978 a workshop in Paris on "Experiences with Information Systems for Rural Development." Over three days, 30 participants, a majority of whom had field experiences in M&E, discussed problems related to data gathering, processing, and analysis. The major conclusion from these discussions was that there are no ready made recipes for the establishment of "simple" M&E systems requiring "minimum" information for "quick" feedback to project management and/or other agencies responsible for planning future projects.

In consequence, a new strategy was needed that would maximize the exchange of experiences with M&E and the diffusion of lessons learned. For those reasons, the World Bank started a series of regional workshops to bring together individuals actively involved in rural development projects and programs to exchange information, ideas, and techniques about project M&E.

The first of these, the Regional Workshop on Monitoring and Evaluation of Rural Development Projects in Eastern Africa, was organized in Nairobi, Kenya in April 1979. 2/ The importance attached to the objectives of the

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1/ Summary Report: Technical Workshop on Monitoring and Evaluation of Rural Development Projects and Programs, Copenhagen, December 6-10, 1976.

2/ Similar efforts to extract lessons from M&E efforts have since then been organized. One took place in San Jose, Costa Rica in October, 1979, sponsored by the Latin American region; another took place in December, 1979 in Kuala Lumpur, Malaysia, on M&E efforts in rural development projects in East Asia and the Pacific.

Workshop in the host country, Kenya, was stressed in the opening address by Mr. Joseph Muliro, Permanent Secretary of the Ministry of Agriculture. The full text of his opening address is reproduced in Annex I.

The Nairobi Workshop was designed to provide an opportunity for individuals actively involved in the mechanisms of rural development to:

(1) exchange information, ideas, and techniques about project M&E, and

(2) derive lessons from field experiences that could be used to improve the design and operation of future M&E systems.

The Workshop was not only a forum for the exchange and accumulation of information; it was also expected to result in a workshop document that would be useful and usable by both the original participants as well as a wider audience. The report would present lessons from field-level experience which could be used to improve the operation of M&E systems and the design and implementation of future systems.

The Workshop sought to focus attention on a particular set of problems related to M&E. These problems had been identified prior to the meeting by potential participants and others who played a part in stimulating the organization of the Workshop. Despite the disparate issues, problems, and approaches encountered in M&E of rural development projects in Eastern Africa three general areas of concern were identified. These were:

1. management's need for and use of information from M&E systems;

2. issues relating to the collection, processing, analysis and presentation of information; and

3. the organization of M&E units.

These topics, identified by those directly involved in providing and using M&E information, became the three major themes for the Workshop agenda.

This thematic agenda, while providing the advantage of focusing on the "felt needs" of the participants, nonetheless had shortcomings. It lacked the comprehensiveness and, perhaps more significantly, the overtly cohesive and cumulative structure that could be achieved by focusing intensively on a single, central idea or problem.

The final agenda, therefore, reflected two different approaches. One highlighted the major themes identified by the participants, and the other involved participants in designing a complete M&E system for one large-scale rural development program. The National Rural Development Program (NRDP) in Malawi was selected for the case-study exercise. The case-study approach in the second part of the agenda provided not only an opportunity for a comprehensive review of the most relevant aspects of M&E but also a framework for systematically distilling the collective experience of the participants.

Participants representing specific projects 1/ were required to submit papers in advance to the Workshop organizers. The papers 2/ were then used to draw up a final agenda. At the Workshop, the papers served as a body of detailed documentation for reference and to support the discussion in working groups, but they were not formally presented.

1/ A list of the participants who attended the first Regional Workshop on Monitoring and Evaluation is shown in Annex 3.

2/ A list of the papers submitted for the workshop is attached as Annex 4.

As each session opened, the issues raised under the theme for discussion were introduced, with a related set of problems and questions. The meeting then broke up into smaller working groups to discuss the issues in the light of the participants' experience. This discussion was summarized at the end of the working session and was subsequently presented to the Workshop in plenary session. Discussions in the plenary session followed the presentations of the working groups. Several sessions were normally devoted to each major theme.

This paper reflects the thematic organization of the Workshop. Each major theme is treated in a separate chapter. The conclusions from the NRDP case-study exercise are incorporated into the three substantive chapters.

CHAPTER II

MANAGEMENT'S NEED FOR INFORMATION

The first theme discussed by the Workshop participants related to the need for information by management. Workshop organizers screened the papers submitted by participants to identify major issues. In discussion, the initial themes were expanded to cover additional topics. Five broad issues were identified:

(a) Who needs information?

(b) What information do managers want?

(c) Why is the information needed?

(d) Why is information not used effectively?

(e) What are the alternatives?

A. WHO NEEDS INFORMATION?

> The primary consideration [in determining the overall purpose of monitoring and evaluation] should be who will use the information and to whose benefit and advantage [19.]. 1/

Identifying the information consumers and their needs is a fundamental step in designing M&E systems. Just a partial listing of information consumers will include those at the project level, as well as those in the national, regional or borrower agencies, and those in the funding or donor agency. Since the needs of the various user-groups are seldom identical, there is a potential demand for a data base far broader than would be needed only by project management. The danger in such circumstances is that M&E units may be expected to be all things to all users, something for which they are not well equipped. As noted in the Malawi Lilongwe Project,

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1/ The number in brackets refers to the paper submitted by a Workshop participant. See column one of Annex 4.

> ...[I]t has been argued that much useful information had not been collected, processed, reported or used for evaluation purposes. However, in view of the fact that data users fall into numerous categories, it is somewhat difficult for an evaluation unit, as at LLDP, to provide regularly a wide spectrum of data and analyses useful to every level of user [16].

There was a strong consensus among the participants in identifying a hierarchy of users, ranking project-level needs highest in priority, national- (or regional-) level users intermediately, and donor agencies lowest.

> The primary function of the monitoring unit is to serve the management of the project. Not by doing what it is told but by standing aside from the day-to-day management and providing informed counsel [24].

Participants also stressed the potentially powerful role of project M&E systems to contribute to more informed planning at all levels.

> Existing project management units implement programs that were designed with a precarious shortage of background information on the socio-economic characteristics of the farming communities. More seriously, the pressure for new projects is such that planning activities are continuing to operate within the same data vacuum [25].

The experiences of the participants differed widely in terms of the use of project-specific information for planning purposes. On the one hand, the adaptive research program of CIMMYT is based on the premise that project-specific M&E come too late in the project sequence to be of real value in designing major components.

> Up until recently farm economics has played an historical role in commenting on the outcome of attempts to introduce new management practices to small farmers. Much of this comment has been critical of the inappropriateness of introduced techniques to the specific circumstances of local farmer populations. Such ex post criticism is not constructive -- it is too late; resources have been wasted and extension morale and standing have suffered from irrelevant program content.

> There is an urgent need to ensure that the technological base is acceptable and relevant to their circumstances before building it into a development program for a population of farmers [21].

On the other hand, project managers, involved in implementing projects already designed, placed considerable emphasis on using information systems to correct inadequate or poor planning and faults in project design.

> The soundness of the appraisal report should be challenged early and as frequently as new information and experience justify [24].

> Assessment of previous assumptions influencing performance would help planners to take another look at their work for future revision of policy, objectives and planning methodology [23].

Evidence from some of the newer projects suggests that design of fully effective management information systems is still a fairly low priority even as the implementation process begins.

> We have not so far been able to establish any system for data collection and compilation. The only source of information is the quarterly report compiled through the reports submitted by each department of the project. It is intended [however] to introduce a system of data collection, processing and analysis [01].

Operational experience in using information systems to support management often reflected the period of time a particular project had been under implementation and the extent to which the information system had evolved over time. Nevertheless, widely different projects commonly contained project information components which failed in the long run to function effectively in a management support capacity.

> In sum, the value of surveys as a short-term management tool has been limited; for long-term planning which requires a knowledge of the working of the rural economy, they have been somewhat more useful. The attitude of the project management toward monitoring and evaluation may be summarized as a belief that there is value in this information for future planning and ex post evaluation but that as a management tool its value has yet to be proven [04].

Units which become effective first experience a protracted, frequently painful and often remarkably similar learning process sharing common patterns of mistakes. [See subsequent discussion in this chapter and Chapter III.]

Some participants distinguished among different users at the project level and argued in favor of two-way flows of information: up from component heads to project management and down again to the component or division level. Some argued further that the downward flow of information should extend to extension workers -- indeed <u>through</u> extension workers to farmers -- but this point of view was far from universal.

B. <u>WHAT INFORMATION DO MANAGERS WANT?</u>

The information needs of project management received major emphasis, although the point was made that some information could serve the needs of different users. Discussion of this point revealed some disagreement, particularly regarding the use of "sensitive" information, and raised the further issue of "screening" or "preselection" of data for users other than immediate management. Different users may need information varying in detail and aggregation. It was suggested that the evaluation officer should screen data for internal project use, while the manager and evaluation officer should jointly screen data to be used by nonproject personnel. Issues related to interpretation of data were discussed together with what was sometimes perceived by project management as the problem that

> [A]ttention [tends to be] focused on minute detail and overall strategy and performance invariably ignored [19].

The point was made that information fed from projects to the regional or national level could and should be determined by a dialogue between staff at each level. Agencies requesting information must be explicit about what

information they want, why, and when they want it. As one participant commented in the discussion, "agencies should not ask for information the use of which they cannot specify in advance."

An overall recommendation regarding the user issue was to identify as early as possible the user(s) of each type of information set (e.g., report, memorandum, summary, or briefing note). Collecting information -- in whatever form -- without the prior and unambiguous identification of a user is an extremely dubious undertaking.

Issues relating to what information management wants were not discussed in great detail because of the consensus among participants that details quickly become project specific. Discussion was framed in terms of a typology of information, ranging from the notion of a minimum information package to help in running the project in the way it was designed (including objective facts about achievements and financial data) to more vaguely formulated but broader information packages which could question the assumptions built-in to the project and therefore reveal inadequacies in project design.

A tendency was observed for information systems to evolve toward less-complex and more managerially oriented approaches, although where resources permitted, some systems had been broadened beyond an originally narrow scope. For example, in one case, the information system had encountered difficulties due to initial over-ambitiousness of its survey program.

> In recognition of these problems, the system has been altered for the 1979 season. A smaller questionnaire has been prepared, the criterion for design being the direct utilization for project management of information collected. Sample size has been reduced to streamline processing, and data collection will be done by staff who are posted to the villages only for the duration of the survey. The survey area has been restricted entirely to those areas served by the project's extension service [04].

A counter-example is a case where the original approach did not address many of the policy issues of wider concern.

> [During the earlier phase of the project] monitoring of achievements was for the most part in physical terms -- number of houses constructed, number of boreholes, mileage of roads, acreage and yields, etc. No attempt would appear to have been made to devise indicators in terms of socio-economic variables related to the average level and distribution of farm incomes, standards of health, education and so on; and no comparisons were made with any control groups [14].

The issue of the boundaries of the authority of project managers was also raised. It was widely agreed that where managers lack authority to make basic changes in project design or components, a broader M&E effort may be necessary

> [to generate] statistically valid facts to support recommendations to higher and other authorities [17].

Despite a powerful trend toward minimum information packages, it was agreed that total standardization of information formats was undesirable. Complete uniformity reduces sensitivity, the potential for rational, creative change, and contains the danger of completely eliminating attention to qualitative aspects. One possible solution to these problems is presented in Chapter III. It recommends that every report presents its essential findings in problem-oriented form and as brief as possible; other aspects should be treated in greater detail in annexes. The evaluation unit should not, nonetheless, be overloaded by too many tasks.

C. WHY IS THE INFORMATION NEEDED?

Discussion on management's information needs overlapped with treatment of what kind of information management wants. The now familiar question was raised as to whether appraisal reports are "bibles" or rather loose

guidelines. While it was argued that good project managers seldom work according to absolute blueprints, experience shows that others may resist modifications during implementation even when project management recognizes the necessity for changes. Other management needs identified included the "fine tuning" of implementation through continuous adjustments, mid-term reviews, and phasing and planning of implementation and feedback into planning for subsequent projects. It is unnecessary to assemble this information, however, unless evaluation officers and project managers have access to and influence with senior officials.

By spelling out the project's structure and design, the appraisal report normally suggests a logical way of organizing the data collection process.

> The basic data will flow from the heads of the various project sections. These data will be compiled and analyzed by the cost accountant (finance officer) by calculating input/output ratios ... profit/loss [07].

A single approach to data collection is now used in Malawi, where there has been considerable experience with both project-specific M&E and with centralized data-collecting services.

> The project management prepares monthly and quarterly reports in a standardized format. It is intended that the Project Monitoring and Evaluation Committee within the Ministry of Agriculture and Natural Resources will meet periodically to discuss these with the following terms of reference:
> - conduct spot checks on project achievement in relation to agreed targets ...
> - relate progress to ... planned expenditure
> - ensure that the project prepares regular work programs and working budgets and that these are related to project targets and actual implementation experience
> - provide an occasion at which proposals for modifying project targets and programs can be discussed and agreed prior to ... approval
> - give an opportunity for project staff to summarize problems in execution and to identify constraints ... following project progress [15].

D. WHY IS INFORMATION NOT USED EFFECTIVELY?

This question essentially concerns the impact which the availability of information has on the decision-making activities of project management. Participants presented cases from project experience in which the availability of information influenced decision-making either adversely or beneficially or not at all.

Using available information had beneficial effects in the experience of the Tanzania Tabora Rural Development Project. An evaluation of local capacity to implement water projects showed that it was less than had been estimated. This resulted in a decision to curtail a subsequent survey to identify 100-150 villages for water planning. In this instance, planning resources were diverted from work with only an uncertain and long-term value to work of more immediate priority and utility.

The Tabora project also provided an example where an important decision could not be made because the appropriate information was not available. A component intended to provide villages with tree plantations for fuelwood and building materials was not completed because information was unavailable on villagers' attitudes toward or ability and willingness to maintain a plantation system. Management was consequently unable to determine what size plantations should be introduced.

Another example from the Tabora project gives an example of a decision to proceed with a project component despite admittedly inadequate data. Management took action with full awareness that a totally different decision might have been appropriate had relevant information been available. In this case, a decision was made to establish village ranches with 600 head of cattle each. Management felt that this decision might have been altered

with more information on villagers' attitudes, patterns of cattle ownership, carrying capacities, village accessibility and the like. It was noted, however, that this component was part of a pilot livestock program, and that a flexible approach was intended.

Alternatively, available information is often ignored in the decision-making process because of its political sensitivity. For example, although information indicated that it would be technically and economically more efficient to maintain a centralized vehicle pool with support services, the centralized service was nonetheless not introduced. To do so involved withdrawing vehicles, equipment, and personnel from the districts who already controlled them. This was politically unacceptable.

In some instances, certain information could not be used, either because it was incomplete or because the supporting data had not been sufficiently checked, processed, or analyzed. Other information was said by project managers to be irrelevant. Backlogs of unanalyzed data were becoming a common experience in a large number of projects. The problem was often related to departures or changes in the professional M&E staff and to the ability to continue to operate the data collection effort no matter what the capacity of the rest of the information system to deal with the data thus generated. Further discussion on the capacity to process and interpret data is given in Chapter III.

Decisions are made on the basis of varying levels of information availability. Several examples are illustrated by projects in Malawi. In the Namwera project, a major change in design resulted from the analysis of data appropriate to the problem.

> During the initial stages of project implementation, it was proposed to establish an "in-project" road construction unit. But, in light of more information, it was found to be uneconomic to establish it on a permanent basis because it was going to be very expensive to maintain the unit after all roads have been completed. It was therefore decided to incorporate the unit into the ... central services [15].

In the Shire Valley project, management used agronomic and economic information to decide to introduce an entirely new crop, guar bean, in one particular area. It far out-yielded the traditional crops of cotton, millet, and sorghum in terms of rates of return. While fully aware of the possible risks of introducing a new cash crop into a largely subsistence economy, data were not readily available which would have permitted analysis in other than the technical and economic dimensions. The decision to proceed nevertheless on the basis of the information which was available now appears to have been justified, and a small guar processing industry is to be established in the area. Experience suggests that pressing operational decisions are frequently, perhaps usually, made despite an apparently inadequate information base. Where these decisions have had beneficial effects:

> ... the experience of the decision-makers and lots of luck were the decisive factors. In overall planning [however], the provision of evaluation data is essential; without it long-term projections will be poorly based and the achievement of project objectives frustrated [19].

The Shire Valley project provides another example of good fortune when a decision was made on little or no information. The project introduced fish-smoking kilns in 1975 based on only an informal assessment that there were considerable quantities of fish going to waste because of a lack of processing facilities, and that kilns had been successful elsewhere.

Generation of information, however, provides no guarantee that it either can or will be used in an operational manner. In the Malawi Lilongwe Land Development Program, where one of the first M&E units supported by the Bank was instituted, one participant maintained that

> [D]ecisions are made as they were before evaluation components existed [17].

The participants identified a large number of reasons why management fails to get the information it needs.

(1) Management is not involved in the design of the M&E system.

> Management will undoubtedly argue that unless a monitoring program has been approved from within, it is primarily motivated by the fact that it can be used as a lever in the form of criticism... [19].
>
> ...Working against the monitoring unit doing a good job is the project manager's ignorance of what the unit can do for him. This may amount to a fear of the evaluation component of the unit. If such a fear exists in the project manager's mind it will infect all the divisions of the project. In these circumstances the monitoring unit can make a very limited contribution to the project's progress [24].

(2) Those involved in project design fail to specify adequately the role of information systems.

(3) Management is incapable of specifying its needs.

> ...Two main factors ... contribute to the very uneven performance of monitoring units themselves:
> - Bank staff responsible for appraisal reports even nowadays often do not understand how the monitoring units works in the service of management.
> - ... the project manager's ignorance of that the unit can do for him [24].

(4) Manangement doesn't react to the information it does receive.

(5) Management is presented with half-digested <u>data</u> rather than usefully interpreted <u>information</u>.

(6) Management has very limited absorption capacity for information.

(7) Monitoring and evaluation systems are underfinanced and/or there are shortages of manpower and other resources in relation to the tasks they are expected to perform.

A number of instances were cited from project experience where management had access to information but failed to make use of it. The reasons included the following:

(1) Management fails to appreciate the relevance of the information or the relevance is not apparent.

> Evaluation is becoming more academic [17].

(2) The information is not timely.

> In one case, a program ... was five years behind with the writing up of data. In such cases, the results have little or no management value and serve merely as a record of what went on during that period [19].

(3) Management is prohibited from acting because the necessary decision is outside its sphere of control.

(4) Management lacks confidence in the information.

(5) The information does not agree with preconceived views or hypotheses.

(6) The information is inconclusive or is not presented in an intelligible form.

> Considering the analysis and reporting on field data, experience in the past has shown that the tendency has been to produce voluminous "theses" which are admirable and complete in themselves but not sufficiently related to the needs of the user -- which are timeliness, brevity, relevance to the specific program and sufficiently "hard-hitting" to encourage the reader to "sit up and take notice" [22].

The common failure of information systems to deliver a useful product for management purposes suggests that some sort of scrutiny is necessary to ensure that performance lives up to expectations. This examination could form a part of ex post evaluation.

> The evaluation aspect should be minimized in the monitoring unit. Evaluation should be performed by an outside agency and be based on good data produced by the monitoring unit, which should, of course, be subject to evaluation itself [24].

There was even stronger support to devise some means to check performance of the information system during implementation.

> The user-statistician dialogue is particularly important in what might be called the monitoring of monitoring and evaluation surveys, which, by their very nature, are designed to keep the executing agency of the project and, perhaps, the financial donor briefed on progress of the survey. The Bureau has set up a tripartite working group to review the progress of evaluation surveys on a monthly basis [13].

It was pointed out that a complete project information system normally relies upon more than an M&E unit for knowledge of what is happening in the project. It may be appropriate in certain cases, for example, for the project financial controller to monitor the M&E unit; in any event, the two should certainly be close collaborators.

> The introduction of effective accounting and internal audit systems on agricultural projects is probably the most useful management information tool for project management units [25].

The issue of how to ensure that management makes use of available information was reinterpreted by some participants as the question, "how can management be guided to make use of imperfect data?" In order to induce management to act, information may need to be directed to others in a position to authorize its use. It was also felt, however, particularly by project

managers, that more autonomy at the project level would be helpful. A number of participants viewed the idea of setting up coordinating systems -- as in Malawi, where decisions outside the manager's sphere of influence can be taken -- as simply compounding bureaucracy. Much more acceptable was the idea of tailoring flows of information within the project and up the chain of command, so that they parallel the structure of decision-making and also ensure that the information generated relates to the quantified goals of the project.

E. WHAT ARE THE ALTERNATIVES?

In searching for alternative methods of M&E there was a strong feeling that more intuitive and subjective approaches should be avoided, particularly where the sources are likely to have vested interests. A positive role was seen for approaches such as "informed local opinion" and "look and listen" visits in the project area, provided these were supplemented by additional objective information.

> It is surprising how much valuable information one can gather from farm visits and informal conversation with the farm staff [05].

Indeed, the major role seen for informal systems is not so much as substitutes for more formal/objective systems but as complements to them; therefore rapid ad hoc surveys, informed local opinion, and other interview techniques, can be used constructively to assist in the interpretation of more regularly or systematically collected data. The potential role of more junior-level project staff as information sources should be encouraged. Regular meetings with these -- and other -- staff can have significant payoffs not only in terms of broadening the information base but also for the staff's morale and their sense of involvement.

> ... Evaluation briefings and senior project staff seminars have been arranged to familiarize the various project sections with evaluation work as well as to obtain feedback on issues affecting project progress [16].

Finally the practical value of cross-checking information from other sources was brought out. Such sources might include previous staff, administrative personnel, university research records, and methodical searches through the traditional dusty files.

CHAPTER III

EXPERIENCES WITH INFORMATION SYSTEMS

The second theme of the Regional Workshop on Monitoring and Evaluation dealt with technical aspects of the initial design, organization and implementation of data collection, as well as the processing and analysis of data. The presentation of M&E results received special attention. Although an often neglected aspect of M&E systems, the presentation can critically influence the programs' overall effectiveness. The experiences of twenty rural development projects in Eastern Africa on these issues are synthesized in the following sections.

A. DATA COLLECTION

A good M&E system rests on collecting the minimum amount of data that can provide usable information for project management. This information can make project implementation more effective and also help to improve the design of future projects or programs. Designing and implementing an effective system should focus on the following types of questions:

1) What data need to be collected?
2) How much is needed? Specifically, what are the minimum amounts of data required to produce the information necessary for decision-making?
3) What survey methods and/or procedures can be used? How should data be collected?
4) Which sampling techniques reduce the amount of data to be collected?

5) How frequently should data be collected?

6) By whom should data be collected?

Each of these questions will be discussed separately in the following paragraphs.

1. What needs to be collected?

Rural development projects aim at increasing the productivity, income, and well-being of large numbers of the rural poor. Most rural development projects are complex and diverse. In Eastern Africa they typically consist of six to eight components providing a comprehensive approach to the agricultural development of a large number of small-scale farmers; in some cases these components are complemented by investments in infrastructure, such as rural road construction, and/or social services developments, such as construction of rural health centers, schools, water supply systems, and the like.

The question "what data need to be collected?" is not an easy one because of the heterogeneity of rural development projects, and it may require a different answer for each project. Where the specific objectives or design of a rural development project are vague, the question can only be answered in broad terms. Plain common sense dictates, however, that the more specific the project objectives, the easier it will be to determine what data are needed.

The first World Development Report stated:

> If more progress is to be made in alleviating poverty, it is essential that objectives be defined so that governments can monitor them regularly. Large amounts of resources and energy can be dissipated if operational clarity is lacking about targets, designs, and plans for execution of poverty programs. Without such clarity, it is difficult either to assign administrative responsibility for implementation or to evaluate the

effectiveness of different approaches to poverty alleviation, and impossible to learn from experience. 1/

When the objectives of a rural development project are spelled out clearly (e.g., increasing the income of x number of families, from the current level y to level z in t years, where x, y, z and t represent numeric values), it is less difficult to establish what data are needed, and at what time.

When the objectives are clearly specified the problem may shift to how the chosen indicator(s) ought to be measured (e.g., if income is used as an indicator it is still necessary to define carefully what should and should not be included). Conversely, when project objectives are vaguely or ambiguously described (e.g., to increase the well-being of the rural poor) close questioning of the project designers is required in order to design the data collection system. In fact, it may be almost impossible to decide what data need to be collected for M&E if the project designers do not know exactly what they want the project to accomplish. A review of the objectives of several rural development projects in Eastern Africa unfortunately indicates that many of them have poorly defined objectives.

Even in projects with carefully and clearly defined objectives, there remains a choice between a time-or an area-based focus for data collection. Measuring change over time requires collecting sequential data, while measuring changes within a particular area needs cross-sectional data. Often, measuring change over time is perceived as the only valid way to follow the execution of a project, and to determine its effects and impact. Collecting time-series data is, however, costly and time-consuming since the impact

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1/ World Development Report, IBRD, August 1978.

and most of the effects of the projects do not emerge until a few years after the completion of the construction or physical development phase. Furthermore, because some changes are inevitable whether or not a project is implemented, it is often difficult to associate measurements of change over time with the impact of a specific project.

In some projects data collection should therefore be oriented toward measuring the key assumptions upon which the project and its expected effects and impact are based. This approach has been adopted for the M&E of the Rural Development Area Program in Swaziland.

> The objectives of M&E of the Swaziland Rural Development areas program are: (1) to measure project progress by providing information on critical phases; on physical and financial achievements of the project; and (2) to assess the effect and impact of the production inputs supplied under the project in relation to the assumed production impact of the project.
>
> The philosophy followed for evaluation is that of testing some of the key assumptions upon which the project and its assumed impact were based, and upon which the project funding was justified. Since the project was justified in terms of an internal rate of return resulting from increased farm level production, evaluation has concentrated on assessing the impact of project inputs at the farm level. Such an approach not only avoids the difficult problem of attribution but is also more relevant to project management since the latter requires to know not only whether changes have been induced, but also by what means they have been produced. Project management needs to know which of the inputs are successful and which are not. Such information is necessary for gradual refinement of the project during implementation. [3]"

In sum, comparing the experiences from several rural development projects in Eastern Africa indicates that time-series and cross-sectional data

time. On the other hand, less costly cross-sectional data can be substituted to measure change in a project area, as compared to a "control" area, or to measure institutional factors of development. The selection of the "control" area raises, of course, additional problems, which may make the collection of cross-sectional data more difficult. Field experiences show that collection of data on control areas, although theoretically desirable, turns out to be an extremely difficult practical problem, because in so many cases it is difficult to distinguish between farm families benefiting directly from the project and those near the project area who have been influenced indirectly.

A pragmatic approach to monitoring would involve collecting either general base-line data or data on farmers in the project area who have not yet been affected by the project. Data from the latter group can be used as a proxy for the "control" necessary to assess the changes that have occurred in an area as a result of the project. 1/

2. How much is needed? Specifically, what is the minimum amount of data required to produce information necessary for decision-making?

Field experiences from many M&E systems show repeatedly that more data are collected or are planned to be collected than are necessary for project management and/or the planning agencies. In Managing Rural Development, Robert Chambers wrote:

1/ "The major problem of impact evaluations of both types (cross-sectional and longitudinal) is that factors besides project participation will influence indicators like income, production, etc. It is difficult to separate out what difference a project made and what difference in income and other indicators were caused by non-project influences. Separating out non-project influences is the main job of an evaluation survey design; through careful structuring of the before-after and participant-nonparticipant, comparisons much of the possible distortion of non-project influences can be eliminated." Samuel Daines: "Impact Evaluation of the Haiti Small Farmer Improvement Project", Report of Practical Concepts Inc., Washington, D.C., January 1979, page 5.

> There is a profound bias in the Western way of thinking, with its most obvious roots in ancient Greece, that knowledge is good. Applied to the planning and the management of rural development this easily promotes and justifies unthinking demands for information -- demands which misuse executive capacity and culminate in mounds of unused data. Information has costs. It is far easier and more natural to ask for, to gather, and to accumulate data, than it is to abstain from asking, to reduce communication, and to limit the information acquired. 1/

> The challenge therefore is formidable, according to Chambers:

> It is to reorient thinking radically, to ask not -- what do I need to know? But rather -- how much does the information cost? Who is going to process and use it? What benefits will accrue? Will the results be available in time? What can be left out? What simplification can be introduced? What do we not need to know? This moves against the tradition of research, against the bias of the educational system, and against the drives of curiosity, but is in harmony with the principles that administrative (in this case information-gathering) capacity is a scarce resource, and that in complex situations activities should be optimal, not maximal. 2/

Project managers may desire extensive knowledge about the project and its achievements, why certain achievements were made and others not. A project manager from a rural development project in Malawi, for example, maintained that "any information that speeds up execution is valuable." Another said that "decisions have been made in the past which were not accurate due to lack of information." This desire for more information, however, should be determined by the capacity of the project to collect, process, and analyze the data. A M&E unit may not have the capacity to provide all the information requested by management. Whether M&E systems

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1/ Robert Chambers: "Managing Rural Development: Ideas and Experiences from East Africa", Scandinavian Institute of African Studies, Uppsala (Sweden).

2/ Ibid.

function or not, project management will continue to make decisions. The crucial issue is how to improve the decisions and the decision-making process through systematic analysis of the data collected.

Other factors that influence the amount of data to be collected include the complexity of the project, its geographical scope, the number of farm families or beneficiaries to be reached, the degree of social and economic heterogeneity within the project area, the number of institutions involved in project implementation and their organizational structure, and the level of the project resources, including those allocated to M&E.

Although arbitrary budgetary limitations may not be an ideal way to determine the amount of data to be collected, they often play a major role in and have had very sobering effects on the design of M&E systems. Budgetary constraints can often help to break the vicious circle of determining the "minimum" data requirements for "effective" project implementation.

Acceptance of lower standards or diminishing levels of confidence can reduce the amount of data required, especially for evaluation. While field evaluation officers expressed strong reservations in the Regional Workshop about data that do not meet minimum statistical levels of confidence (e.g., the five percent level), project managers clearly have quite different expectations. Project managers at the Workshop felt that data on the progress and achievements of rural development projects did not need to be highly accurate. Some felt that an 80% or higher accuracy level was acceptable and useful for decision-making. Survey specialists among the participants further suggested that (i) the use of statistical confidence limits are subject to high and often misleading non-sampling errors; and (ii) the design of the data collection system should be reviewed if the error margin is greater than the change

one expects to measure. It was also observed that there is a trade-off between statistical accuracy and the costs of data gathering. Increased accuracy can be obtained through large-scale random samples, but this increases considerably the costs and the time required for data gathering and processing.

3. What methods and/or procedures should be used? How should data be collected?

Discussion of these questions in the Workshop revealed a broad range of opinions. Some representatives claimed that complex rural development projects comprising six to eight components should be evaluated by field visits, observations, and interviews with only a few farmers. "You've only got to talk to half-a-dozen farmers...to know how the project is doing", said one participant. The manager of the Tanzania Dairy Farming Company wrote that:

> Statistics give us the coefficients but hardly tell us the reasons for certain results. There is no way of monitoring the efficiency of management in the farms except probably by comparing the results from farms with similar conditions. The human factor has to be taken into consideration in project monitoring. Low production coefficients may be a result of an uninspired management or lack of appropriate incentives to the staff. Such information cannot be derived from monthly reports but by visiting the project sites frequently and talking to the people concerned. It is surprising how much valuable information one can gather from farm visits and informal conversations with the farmers [5].

Field visits and informal interviews are often frowned upon by the practitioners who believe that the "rules" of data collection are those of sampling frames and statistics. It is often difficult, however, to draw up a good survey questionnaire for a particular area. Frequent site visits and informal discussions with farmers throughout the project area are essential if project managers and M&E officers are to keep in personal touch with what is (or is not) going on.

When a project is small, the number of beneficiaries limited, the target group of farmers fairly homogenous, and the approaches to agricultural development simple, then farm visits, informal interviews, and other subjective approaches to data gathering are probably adequate. The objectives, nature, and composition of the majority of the more recent rural development projects, however, make such non-systematic approaches to gathering data for monitoring or evaluation risky. An evaluation officer with many years of experience both in Latin America and Eastern Africa stated:

> Adoption rates, labor profiles, production functions, return rates, yield levels...etc. are quite complex, and the inherent small sample of an informal attempt can leave too much room for extreme bias in results. From my experiences, informal analyses are dangerous. I strongly oppose informal evaluations [8].

Farm records, direct measurements, and surveys using questionnaires are more systematic ways of gathering data. Farm records are more often kept by better educated farmers and are consequently available from only very few farmers, usually on larger enterprises. Even when accurate and detailed records exist, participants in the Workshop felt that a survey is needed to evaluate the data obtained from them.

Direct measurements are needed on key indicators such as crop yields, water flows, fertilizer applications, food losses, and the like. The measurement of crop yields is probably the most difficult -- if not controversial -- issue in M&E. Some project officers with a great deal of field experience claim that measuring yields in rural areas is so difficult and costly that it make more sense to measure "stock" variables (e.g., inventories of livestock or quality of the farmer's house -- especially type of roofing and the like) rather than "flow" variables such as expenditures, income, and yields.

Only one paper submitted for the Regional Workshop discussed a specific method for taking yield measurements. In the Agro-Economic Surveys undertaken in Malawi, yield measurements involved the objective definition of yield subplots and the harvesting of the yield sub-plots. The approaches used both in the Agro-Economic Surveys and by the Evaluation Units in Malawi were summarized as follows [18]:

-Method of laying the yield sub-plot:

For each garden measured the first thing done is to obtain the perimeter of the garden. Let us call this p. We then calculate half the perimeter (1/2p). Two numbers are then chosen from a random number set within the range 0 to 1/2p. Let these random numbers be r^1 and r^2. The random number r^2 fixes the perpendicular distance from the point of entry into the garden. When the point for laying the yield sub-plot is found a 10 meter diagonal is marked out first. By streching a rope from the ends of the diagonal on one side and then the other a 7.07 square is formed. The enumerator achieves distances along the perimeter and inside the garden through paces. The relationship of paces and feet is well established. The random numbers are taken to represent feet. The rule for fixing the yield sub-plot is that the first diagonal be marked in the direction that the person is pacing. If there is less than 10 meter to the end of the garden, the diagonal is marked in the opposite direction. Once the yield sub-plot is laid a string is tied to pegs on the corners of the yield sub-plot. This string is used to identify the yield sub-plot particularly at harvest time.

-Method of harvesting yield sub-plot:

When the piece of string is laid round the yield sub-plot, the farmer is told not to disturb it. At the time of harvest the enumerator arranges with the household head to harvest his yield. Different crops involve different methods of harvesting. For example, harvesting of a maize yield sub-plot involves the following: The first thing done before harvesting maize is to record the number of plating stations in the yield sub-plot, the number of maize cobs, the number of plants in the yield sub-plot, the number of cobs taken or stolen for human consumption. The harvested cobs are shelled, dried and weighed. From this data it is possible to estimate the yield per plot.

This method for yield measurements has been used in Malawi since the beginning of the Agro-Economic Surveys. 1/

1/ The Agro-Economic Surveys in Malawi have, since 1968, aimed at obtaining input/output data on smallholder farms in order to enable the Ministry of Agriculture and Natural Resources to devise methods of improving subsistance farming. Since 1975 AES have aimed at collecting common baseline data that are used for planning of various development projects within the National Rural Development Program.

Ching'anda feels that:

> Apart from the errors arising from the definition of boundaries of the yield sub-plot, and hence the under or over-estimation of yields in that way, the (above) method has been found to be very satisfactory. I can only say that the level of accuracy achieved by this method is of the order of 95%, or 5% error, or less [18].

Questionnaires are the most common instruments for gathering data. Based on more than a decade of experience in some of the projects represented at the Workshop, it is necessary to emphasize some simple, commonsense rules about the use of questionnaires. They should (i) always be closed rather than open-ended since the latter are almost impossible to analyze on a large scale; (ii) be pre-coded and pre-printed so that processing of the data is simplified; (iii) be kept short; 1/ (iv) be pre-tested at least once and preferably twice in the field; and (v) contain internal consistency checks so that the enumerator can verify the farmers' responses in the field. It can also be useful to lay out the table formats which are expected from the analysis of the data before designing the questionnaire(s).

In sum, questionnaires should be simple and brief; they should normally not require more than one to one-and-a-half hours to be completed. Longer interviews may bore or irritate the farmer, and could impair his answers or reduce his willingness to take part in future surveys. Questions should be included only if their use and role in the subsequent analysis have been established. Questionnaires should be reviewed and amended after at least one and preferably two pre-tests in the field.

1/ The length can best be measured in terms of the average time required to fill them out. Although most questionnaires should not exceed one to one-and-a-half hours, Collinson suggested that this limit can be pushed up if the visit is announced to the farmer, i.e., if farmers are informed in advance that the enumerator will be coming.

4. Which sampling techniques reduce the amount of data?

Questionnaires and direct measurements usually require two-stage stratified random sampling. This was the most commonly applied sampling technique described in the paper submitted for the Regional Workshop. The primary sampling units are usually geographical areas, limited by specific boundaries or clusters. Second stage sampling then consist of a random selection of project participants or households 1/ within each primary sampling unit. For example, the farm survey sample design for the Integrated Agriculture Development Project in Kenya was summarized by Gachui as follows:

> The sample is a two-stage stratified sample. The first stage being the locations within the IADP districts and the second stage consisting of IADP loanees. The stratification of the sample is at the first stage. The primary sampling unit consisted of all the IADP locations within the IADP districts. The locations were zoned using the climatic zones and the best suitable technical packages to be administered in these areas. The combination of the climatic zones and 'technical packages zones' gave rise to agro-economic zones which formed the basis for the stratification. After the stratification one location was chosen at random from in the selected strate within the district. The list of loanees within the selected location formed the second stage selection frame. A probability sample of 40 loanees within 14 locations, from 14 districts was selected. This provided a sample of 560 respondents [10].

The sample sizes described in the various Workshop papers vary enormously. Workshop participants felt that sample size should depend on the purposes of the survey, the methods selected for data gathering, and the time and resource constraints on the project staff. It is critical to establish

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1/ Whether or not individuals or households are sampled is an important question. The unit surveyed should be the one which makes the decisions about processes on the farm, or else the answers will not represent probable effects or impact of the project.

a manageable sample size. In some circumstances in-depth case studies may be preferable to large sample surveys. Often, results of past surveys can be used in determining the optimal sample size.

On the Southern Sudan Agricultural Rehabilitation Development Project, Duncan reports that:

> Large sample size and the detailed nature of the questionnaire led to delays in data processing and incomplete use of information collected. The value of the surveys as a management tool was therefore lessened [4].

5. How frequently should data be collected?

The frequency of data collection will vary according to the content of the project and the indicators that are selected for monitoring. There was, however, a clear consensus among the Workshop participants that farm data should normally be collected far more frequently (e.g., once or twice per season) than socio-economic data, which usually require only annual or biannual estimates. There was also consensus among the participants that too-frequent data gathering leads to fatigue and/or bias among enumerators and/or respondents. Work schedules for enumerators should consequently be carefully designed to avoid unneeded interviewing. Workshop participants recommended that enumerators should live in the villages in order to reduce the amount of time spent contacting the interviewees.

6. By whom should data be collected?

Much of the volume of data required for monitoring is part of the regular reporting requirements of the agencies involved in the implementation of rural development projects. Consequently, the responsibility for data gathering for monitoring may rest with the staff of these various agencies. On the other hand, the evaluation data collected through surveys may require

distinct teams of enumerators and supervisors. The quality of the data depends upon careful supervision of the enumerators. Appropriate enumerator/supervisor ratios recommended by Workshop participants ranged from 4:1 to 6:1.

Experience in various projects suggests that the best enumerators will be those with only a primary level school certificate. College-educated students, by contrast, tend to get much too involved with the questions, according to one participant. Supervisors should be "experienced" enumerators, and have, preferably, a high school degree. Field experience from rural development projects, in Eastern Africa and elsewhere, indicates strongly that in-service training of both the enumerators and the supervisors is vitally important to maintain quality of the field data and ensure survey success. Time spent by the evaluation officer on enumerator and supervisor training more than pays off in time saved in subsequent editing and checking of the data. An initial one to two week training of all enumerators and supervisors engaged for data collection was highly recommended.

B. DATA PROCESSING AND ANALYSIS

Several papers submitted for the Regional Workshop on Monitoring and Evaluation experiences discussed problems related to data processing and analysis. Data are not information. As long as data are not transformed into information they remain useless to management. Some typical observations on this point were:

> Some data was collected, but could not be used since it was not checked, processed nor analyzed[6].

> The (farm management survey) data proved to be more difficult to process and analyze. Punching and verifying on the computer cards were undertaken by inexperienced staff, and no software (was) developed. Consequently, the...data collected from 1969-1972 remained unanalyzed (until 1978) during phases one and two for the evaluation work[15].

> It is quite clear that more information would be more valuable in analyzing farmer response patterns, but more information could not be managed by the data processing system [18].
>
> As a result of the experience gained elsewhere, project management restricted the reporting, monitoring and evaluation system to a few essential aspects of project activities so that information could be collected, analyzed, and a report produced. It was strongly felt that there was no use in gathering data that could not be analyzed [20].

Numerous reasons were cited to explain problems and delays experienced in data processing and analysis. Most had to do with bad planning or management of the various aspects of data collection, processing, and analysis. Others related specifically to staffing problems. Major pitfalls experienced in the data processing and analysis for M&E systems are discussed below.

Basic causes for problems and delays in the data processing for M&E include: (i) a lack of detailed planning; (ii) a lack of funds; (iii) a poor distribution of resources between data collection on one hand, and processing, and analysis on the other hand; and/or (iv) the establishment of unrealistic deadlines for producing evaluation reports.

Another problem was that of too much data, usually a consequence of poorly selected indicators and/or an overambitious sample size. Poor questionnaire design or inappropriate tailoring of the format of the questionnaire to the data processing capacity also caused delays.

Participants in the Workshop felt that a lack of or delayed development of software and analysis procedures as well as time-consuming validation processes also caused some of the problems, and that these were problems inherent to data processing.

Manual versus electronic data processing was extensively discussed. Experiences indicated that in general the availability of effective computer services are overestimated, and the requirements for the processing of data are grossly under-estimated. Furthermore, if a computer is available and used, demands on analysis escalate far beyond what is reasonable.

Workshop participants therefore recommended that: (i) the data processing and analysis requirements for a M&E system should be carefully planned and budgeted; (ii) data collection should be limited to what can be reasonably processed and analyzed; and (iii) field-level checking of data be instituted. The last may require some simple four function calculators for all of the supervisors, but is extremely important in reducing errors and the time spent on data editing.

In view of the complexity of rural development projects, the choice between manual or electronic data processing is usually not a mutually exclusive one. Some initial analysis of key indicators might best be done manually; full analysis of the data may on the other hand require programmable calculators or a desktop computer. 1/

Probably the most acute problems in data processing and analysis result from inadequately trained evaluation officers, insufficiently skilled staff for doing manual tabulations, a lack of highly skilled expertise for

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1/ The experience from the analysis of the results of a nutritional survey in Egypt shows that the efficiency of data checking, transfer, and analysis can be substantially improved over conventional methods with the use of mini- and micro-computers. See Mats Lörstad, "Experiences from a Nutritional Survey Bringing Portable Micro-computers into the Field." Decision Data, Lund, 1979 Sweden [mimeograph]; see also "Monitoring Rural Development with Mini-computers: The Quinault Indian Experience", prepared by Guido Deboeck, Agriculture and Rural Development Department, World Bank, Washington, D.C., April 1979.

computer processing of the data, an overload of assignments frequently preventing evaluation officers from fulfilling their evaluation tasks, and last but not least, a high turn-over of M&E staff [see also Chapter IV].

The frustations experienced by many is most clearly expressed in this letter from a field officer:

> I had visions of getting thorugh a considerable amount of analysis of basic [data] that would have provided me with information on the relationships between the number of seasons the farmers have been on a scheme, the area planted, the yields, the prices realized, the costs incurred ... etc. Though I shall have some data on this, it will not be as comprehensive as [expected]. ...I have managed to get a breakdown from most of the schemes ... which though requiring considerable qualification, should give us reasonably accurate data concerning the costs of provising certain services 1/.

C. PRESENTATION OF M&E RESULTS

The presentation and timely availability of M&E results determine critically the effectiveness of those systems. Low [3] presented in tabular form the responses received on three types of reports with evaluation results from a rural development project in Swaziland. The three types of evaluation reports were: (1) a comprehensive report of about fifty pages; (2) a preliminary field manager's report of three to four pages plus tables; and (3) a briefing memorandum of two to three pages focusing on specific issues.

1/ Personal communication from a field evaluation officer in Zambia.

Summary of Responses to M&E Results
of a rural development project in Swaziland

Users: / Type of reports:	Comprehensive Report	Preliminary Report	Briefing Memorandum
Specific field Manager	some	much	some
Other field Managers	nil	not distributed	nil
Central Management	nil	some	much
Government Policy Makers	nil	not distributed	much
Donors:			
project supervisors	nil	not distributed	some
project identifiers	some	not distributed	some
Others:			
consultants	much	not distributed	not distributed
researchers			

From this table it is quite clear that a short briefing memorandum and a preliminary report were more acceptable than the traditional elaborate evaluation report.

Other participants in the Workshop felt that M&E reports are often poorly written and/or presented. The M&E results need to be communicated actively and presented in a way the project manager can understand. It was therefore recommended that project managers should receive the full evaluation report as a source document, while a two to three page summary should be prepared for more general distribution that is issue- and problem-oriented. At higher levels of management even more aggregated information should be made available. According to some participants, the shortest summary should not exceed one page.

From a central planning and evaluation viewpoint, Doughty, senior evaluation officer of the Ministry of Agriculture and Natural Resources in Malawi, offers the following advice:

> Individual projects [in Malawi] had developed their own designs of monitoring and reporting. Each of these designs was good in parts, but on review each was lacking essential data, whether for Ministry, donors, project management or evaluation requirements. A new standardized approach to project monthly, quarterly and annual reporting was therefore developed by the Central Evaluation Unit, in close consultation with report compilers and users at all levels [22].
>
> The design of the standard proforma has been geared to the well-recognized need for research 'on farm' in small-holder agriculture to determine what are the practical limiting factors to effectiveness and adoption of project packages and extension 'messages'. This information then forms the basis for an 'early warning' feedback of indicators to policy-makers, and project management in order that timely adjustments can be made during the life of the program. [22]

Ideally, the communication of M&E results should be done through multiple channels and media. Mburathi pictured these as follows:

> As a feed-back mechanism the M&E system provides the required information for management decision-making, planning and research. Data collected is compiled into management information as soon as constraints are identified and reported. Frequent reconnaissance and field visits are to be made to problem areas and collective and corrective action taken. Action to be taken to reduce constraints are communicated by telephone to relevant officers and where problems need discussion meetings are held immediately to discuss solutions. Work plans and guidelines are adjusted according to findings of M&E. Regular workshops and seminars are held for all the senior field staff and during this time findings from M&E unit are discussed and recommendations made [09].

CHAPTER IV

ORGANIZATION OF MONITORING AND EVALUATION UNITS

A richness in the variety of opinions expressed and experiences encountered characterized the discussion of the issues on the institutional aspects of M&E. The Workshop discussion is most easily treated according to following six main issues: (i) location of M&E Units; (ii) strategies for institution building; (iii) functions and structure of M&E units; (iv) staffing and training; (v) human and motivational factors; (vi) cost of M&E.

A. LOCATION OF M&E UNITS

The first issue focused on a comparative analysis of the advantages and/or disadvantages involved in creating a project-based M&E unit (e.g., Malawi Lilongwe Land Development Program and Shire Valley Agricultural Development Project, Southern Sudan Agricultural Rehabilitation Project) as opposed to using an outside evaluation agency (e.g., contracting with a university to do evaluation studies, as in the Tanzania Kigoma Rural Development project, or with a commercial consulting firm). The main criteria for comparing the two approaches included their: (1) ability to communicate evaluation findings to management, (2) objectivity and independence in carrying out the evaluation studies, (3) available pool of skills, (4) potential to contribute to further institution-building, (5) likelihood of timely results, (6) duration of exposure to daily project activities, (7) continuity or discontinuity of operation over the project's life, (8) cost, and (9) accountability.

After weighing the trade-offs between the in-house and the external systems on the basis of these (and other) criteria, the Workshop participants agreed in large measure that locating the M&E capability close to project activities is preferable to the temporary use of consultants not associated with the project. The actual location may, depending on specific circumstances, be either at the project level or, as is sometimes more desirable, at the central or regional level headquarters.

It was pointed out, however, that outside consultants do have definite advantages regarding certain requirements of M&E work. These may include special skills, independence and objectivity, an ability to work exclusively on M&E, as well as access to modern data processing technology, and others. The effectiveness of project units might on the other hand be impaired by a scarcity or discontinuity of human resources and a certain loss of objectivity. Possible solutions were suggested including that of linking project units with outside agencies, using temporary consultants to strengthen the project unit's capability, and receiving technical assistance from donor agencies and the like. Where appropriate, another possibility would be for the unit or other data-handling agency to create special "task forces" to cooperate in generating data for particular purposes.

> Monitoring and evaluation surveys do offer the chance to integrate general household data collection methods with in-depth case study probes of selected variables on a limited sample. This integration can be best achieved by conducting the surveys within the institutional framework of the main data collection agency, but with the collaboration of other institutional, academic or specialized researchers [13].

B. STRATEGIES FOR INSTITUTION BUILDING

What strategies are most appropriate in achieving project-specific M&E institutional capabilities?

Several alternative models were examined, including the formation of: (1) discrete project-specific M&E units, (2) inter-regional units to service several projects, (3) central (national) evaluation units, and (4) integrated combinations of 1, 2, and 3. Actual experiences with and the design of integrated evaluation systems were described in the Workshop papers [22], [13], [5], and [6].

Most Workshop participants agreed that the monitoring function should be physically located and carried out at the project level no matter which institutional model is selected for evaluation work. This leaves at least two options:

(1) to dissociate evaluation work from monitoring, and to locate the evaluation capability outside the project management unit. This separation should, however, not be complete, and various forms of linkages may be contemplated;

(2) to integrate both the monitoring and the evaluation functions at the project level (where monitoring should necessarily remain), within a unified project M&E system.

Discussion of these approaches produced numerous suggestions and proposals for possible organizational forms. Most of the institutional forms need to be adapted to the specific nature and needs of different types of projects (e.g., area integrated as contrasted with national projects) and the structure of government organizations.

Many participants felt that an evaluation unnit at project level might be highly desirable to feed back findings to both project management and policy/planning bodies. In the short-run, however, available resources make this an unrealistic option for many projects.

> Developing countries have limited resources, both of skilled manpower and finance, for the successful running of surveys. Proliferation of data collecting agencies, with inevitable duplication of efforts, and often generation of incompatible data cannot be justified[13].

Project based evaluation can be extremely effective for not only project work, but also for developing central evaluation units. The Malawi case provides an instructive example of such institutional evolution. Nearly twelve years of experience with the project-based evaluation units there resulted in a gradual strengthening of their internal capabilities and in the establishment of a central unit to provide technical support.

Most participants agreed that institution-building strategies in M&E should emphasize a two-tiered model in which a centrally located evaluation unit links a network of decentralized, project-based M&E units.

> Recent international promotional efforts aimed at popularizing monitoring surveys and surveillance systems have led to a setting up of data collection agencies whose sole objective is the conduct of such surveys. While there is very little to be said for this in the case of national surveillance systems, the evaluation of a localized project may seem a suitable survey to be handled outside the main institutional data collecting agency[3].

There now appears to a growing trend toward two-tiered systems. The Workshop, however, did identify cases which strongly resisted decentralizing any part of the M&E activities. In these cases, the key factor in determining institutional flexibility seems to be whether the local or the central units were established first. In the two-tiered systems, the functions of the central evaluation unit compared with those project units should consist not of administration, but of

> (1) methodological support (e.g., providing guidance in designing surveys, rationalizing data-collection instruments, etc.),

(2) training staff and facilitating the cross-fertilization of experience,

(3) quality control on the data generation, processing, and analysis work carried out at the local levels, and

(4) support for in-depth analysis of information generated at project level, and for using more efficient or sophisticated data-processing procedures.

The central units would also have specific functions in relation to planning and government policy-making bodies. They would compare findings and synthesize lessons across projects.

C. FUNCTIONS AND STRUCTURE OF A M&E UNIT

Detailed specifications for M&E units emerged from the working groups and plenary sessions. There was considerable debate on the functions of the project-based units and on their internal organization.

One issue involved the support which these units ought to give to the project manager for designing the project's routine reporting system. The papers prepared for the Workshop contained conflicting evidence about current or past practices on this point. The experiences of two project managers, for example, were diametrically opposed regarding their involvement in the design of the project reporting and information system:

> I was fully involved in the designing of the reporting system with assistance from the previous Financial Controller... The monthly report is entirely mine... The appraisal report was utilized for designing the monitoring system [06].

> I was in no way involved in designing the reporting, monitoring and evaluation system used in the project. However, for [the second phase] I designed the organization structure, improving on [the first phase] [20].

There was no consensus on this issue; the discussion reflected a variety of solutions responding to the practical problems of time, local practice, resources, and personality.

Other points referred to the role of the project M&E unit in feeding back information to the project management level. This information covers the topics of the reactions of farmers, response rates, beneficiaries' attitudes, as well as the role of the project in involving farmers in participatory planning of local investments and activities. The importance of the sociological underpinnings in evaluation work were emphasized as a contrast to the limited impact of evaluation studies which consider solely economic aspects.

D. STAFFING AND TRAINING

Monitoring and evaluation requires different staffing patterns and training needs depending on the nature and size of the projects, and on whether a central or a project M&E unit is considered. Most participants agreed that the professional qualifications of an agricultural economist or a socio-economist [with some training in sample survey design and analysis] are pivotal for a M&E unit which cannot afford to employ more than one or two highly trained or experienced staff members. It was also recognized that economists may be required at two levels: (1) to organize and conduct surveys as well as to train inexperienced staff and (2) to generate the data flow from the various project components, analyzing the data and providing management with a concise synthesis of all project activities.

When a central or large project unit is being established, a multidisciplinary staff is far more desirable than one consisting solely of economists. Other skills may be required in sociology, statistics, and data processing. Opinions differed regarding the value of contributions by sociologists or anthropologists in evaluating projects' development impact. Most participants felt, however, that sociological aspects need much more consideration than is currently given to them in evaluation or baseline studies. The

need for sociological information and analysis was stressed in a number of Workshop papers, including [11], [15], [20], and [23]. The paper from the Southern Sudan Rehabilitation Project, for example, stressed the need

> ...[T]o investigate the social role of livestock and cultural attitudes which might have a bearing on development policy. It is my view that this type of sociological investigation, to be fully useful, should be conducted by one with a training in the analysis of social relationships based on kinship...[04].

Staffing, it was agreed, is always a serious problem. Few individuals at either the national or international levels have relevant experience in the design and operation of project information systems, and those who do are often unwilling to return to work at the project level.

> Professional [and] experienced staff capable of efficiently monitoring a project are rare kinds even when recruited at international levels. Really good agricultural economists, sociologists and statisticians tend to cut their teeth in field projects but after one bite withdraw from the field to remote fastnesses [24].

The continuity so essential to effective M&E is consequently hard to maintain.

> As with some other developing countries, it is Malawi's unfortunate experience that officers in charge of evaluation sections are contract workers and of varying experience and ability. Constant changes in the person guiding the evaluation activities at project level in the past have meant some problems in data flow and comparability [22].

Staffing problems result in part from training problems. What type of training is needed to create and improve the staff capacity to carry out M&E? The participants addressed the need for flexibility in training, including short-term, long-term, and various forms of on-the-job training. In several instances a trade-off was observed between the use of better-trained permanent staff, the amount of supervision necessary, and the costs of data

collection. Where personnel involved with M&E are not permanent staff, for example,

> field staff have to be recruited and training at the start of each survey and are employed only for the duration of the survey. This results in higher costs, the use of inexperienced staff and the need for very close supervision...[04].

Supervision needs to be at a high standard, requiring effective staff training at all levels of the information system.

While general agreement was expressed on the urgency and justification for investment in training M&E staff, Workshop participants voiced strong concern about the risks of losing better-trained staff to the private sector or elsewhere. Rates of attrition seem to be higher when there is no possible career prospects for those receiving training in monitoring and evaluation. Where staff have permanent appointments, are given a feeling of professional involvement and have further prospects, such as "graduating" to a statistical bureau, census office, or to project administration, the rates of staff turnover are far lower. This results in less need for repetitive training.

E. HUMAN AND MOTIVATIONAL FACTORS

The topics raised in this section concern the incentives for and constraints on the work of the evaluator. These include the wage structure, (generally non-attractive), the lack of career prospects, the risks of personal conflicts with project implementation personnel, and the like.

The cultural and political aspects of communicating evaluation findings, whether within the project structure, to outside government agencies, or to international donors, were pointed out as important real life problems that were often overlooked.

> The less-publicized aspects of establishing an evaluation unit were the most onerous and possibly the most critical to the success of the exercise. Of the human problems encountered, particular attention may be drawn to relationships with management, the financial controller, other section heads and the Ministry...[14].

The effectiveness of evaluation efforts decreases, sometimes severely, with the mishandling of these factors. They may even jeopardize the position of the evaluation. The project manager has a particularly critical responsibility for protecting the integrity of the evaluation and the evaluator's position.

> The manager is the meeting point of the subjective experience of the field staff and the objective information of the monitoring unit [24].

Ideally, M&E efforts provide a way for project staff to check on their own performance and to permit their superiors to do the same.

> Too often experience has shown that responsible officers in charge of their particular component have become immersed in day-to-day problems of implementation, at the expense of taking time to "stand back" and evaluate the effects which their efforts are making towards the planned objectives of the project [22].

In practice, however, this is realized only infrequently. This failure is partly because staff who feel responsible for particular activities become defensive about their actions and interpret evaluation information as personal criticism. Clearly, enlightened management can use M&E as a tool to foster better performance in both the human and physical dimensions of the project; but examples of such use are extremely rare.

> It is a difficult, perhaps impossible task to reconcile the necessary measure of criticism inherent in the functions of an evaluation unit with the maintenance of good relationships with other project personnel [14].

Some of the participants felt strongly that personnel involved with M&E are underpaid for their work, especially in comparison with other project staff or staff in collaborating institutions. Others noted that project wage and salary structures are normally determined by a country's civil service agency. Regrading the posts in evaluation work could reflect more accurately the skills required.

Participants discussed the role of incentives in improving the flow of information at all levels of a project. A project in Tanzania provided an instructive example.

> A lot can also be achieved by giving the right incentives to the right people. At one farm it was thought that the low breeding performance of the herd using [artificial insemination] was a result of poor heat detection. We gave the herdsman a shilling for every heat detected. This has improved the breeding performance of the herd a great deal [05].

Evaluation officers among the participants expressed concern on behalf of their more junior staff for a poorly established career structure in M&E work. In many countries, this work is regarded as project-specific rather than as a part of the wider process of public administration. Staff are often employed only on a casual labor basis corresponding to the peak periods of data collection, creating unfortunate discontinuities in staffing. Where countries have a hierarchy of data collecting and data using agencies -- such as at the project, regional and national levels -- staff realize that prospects exit for promotion and more advanced training. In the absence of such opportunities, staff may be demoralized by the realization that their jobs are likely to be terminated upon completion of the project; and such uncertainty acts as a powerfully negative incentive.

The Workshop participants repeatedly emphasized the human dimension of M&E in the rural development projects. Their experiences show that many of the day-to-day problems of operating project information systems can be easily overcome or avoided altogether if that rare individual -- the right person -- is in the job. Given the importance attached to the role of the individual as a catalyst in achieving more effective M&E, it is perhaps appropriate to close with the following quotation from one of the Workshop papers:

> A robust personality may be a greater asset to a project evaluation officer than competence in sophisticated statistical techniques [14].

F. COSTS OF M&E

Although an increasing proportion of the rural development projects supported by the Bank include M&E systems, only about a third of the M&E systems are costed at the time of appraisal. A complete list of all Agriculture and Rural Development projects supported by the Bank since fiscal year 1975, in Eastern Africa, is shown in Table 1. This table shows that 39 agriculture and rural development projects financed in the period FY75 to FY79 included a M&E component. The total estimate of the costs of these M&E components at the time of appraisal amounted to US$12,750,000 or approximately US$325,000 per project.

Among the projects, the costs of M&E system varied from 0.5% to more than 5% of their total base-line costs (i.e. total project costs less contingencies). On the basis of empirical evidence and/or informed estimates, several participants in the Regional Workshop considered that the costs of M&E systems should be about 2 to 3% of the project costs. If this much

is actually allocated for the purpose of M&E, then a reasonable job could be done. Some participants felt that even 1.5% of the total project costs would be adequate if low-cost options for data gathering, processing, and analysis could be identified, and used by the project staff.

It was strongly recommended that funds for M&E should be divided, approximately equally, between data gathering on the one hand, and data processing and analysis on the other hand. The experience from several projects in Eastern Africa shows that bottlenecks in data processing and analysis have often resulted from a lack of funds.

The zero-budgeting approach applied to M&E in the rural development project in Swaziland comes down to this:

> With greater resources we would not expand the data collection aspect of M&E system but would seek more trained manpower to analyze the data available and to reorient the data collection effort more efficiently and effectively. Adversely, with fewer resources we would devote less time to data collection by running fewer enumeration teams and requiring less detailed physical, financial and extension reports. [3]

TABLE 1

MONITORING AND EVALUATION OF
AGRICULTURE AND RURAL DEVELOPMENT PROJECTS IN
EAST AFRICA

FY / COUNTRY	NAME	PROJECTS WITH M/E 1/	COST OF M/E $ 000 2/	TOTAL PROJECT COST US $MIL	TOTAL BASE COSTS US $MIL	M/E AS % OF BASE COSTS 3/
75 AGRICULTURE						
KENYA	FORESTRY II	0	0.	55.5	42.80	.0
MADAGASCAR	FORESTRY I	0	0.	17.2	12.90	.0
TANZANIA	SUGAR DEVELOPMENT	0	0.	55.8	46.70	.0
RURAL DEV.						
ETHIOPIA	AG.DEV-LWR.ADIABO(SHIRE)	1	100.	13.5	9.60	1.0
KENYA	GROUP FARM REHAB CREDIT	1	70.	23.2	14.30	.5
MADAGASCAR	LIVESTOCK II	1	50.	12.8	8.20	.6
MALAWI	LILONGWE III RURAL DEVT.	1	160.	12.0	9.30	1.7
SUDAN	RAHAD IRRIG. II	0	0.	195.7	146.30	.0
TANZANIA	RURAL DEVT I (KIGOMA)	1	400.	13.3	9.50	4.2
76 AGRICULTURE						
ETHIOPIA	RANGELANDS DEVT. PROJ.	1	700.	42.9	30.10	2.3
TANZANIA	DAIRY DEV.I	1	100.	15.3	9.90	1.0
RURAL DEV.						
BURUNDI	COFFEE II	1	300.	7.5	5.40	5.6
	FISHERIES DEVELOPMENT	0	0.	8.6	5.50	.0
SOMALIA	DROUGHT REHABILITATION	1	200.	10.8	9.00	2.2
	NORTHWEST AGRICULTURE	0	0.	13.9	8.90	.0
TANZANIA	MAIZE DEVELOPMENT	1	0.	38.1	30.20	.0
77 AGRICULTURE						
ETHIOPIA	REVISED AMIBARA IRRIG	0	0.	61.4	40.60	.0
KENYA	SOUTH NYANZA SUGAR PROJ.	0	0.	105.3	89.90	.0
	THIRD AGRICL. CREDIT	1	200.	40.0	34.20	.6
TANZANIA	FISHERIES I	0	0.	12.4	7.80	.0
	FORESTRY I	0	0.	8.1	5.30	.0
	TOBACCO PROCESSING	0	0.	11.3	8.60	.0
ZAIRE	LIVESTOCK II	1	400.	16.1	10.60	3.8
ZAMBIA	INDUSTRIAL FORESTRY II	1	0.	34.5	23.50	.0
RURAL DEV.						
KENYA	BURA IRRIG. SETTLEMENT	1	0.	98.4	71.30	.0
	INTEGRATED AGRIC DEVT	1	400.	35.7	29.20	1.4
RWANDA	CINCHONA PROJECT	0	0.	2.1	1.50	.0
	RURAL DEV.(BUGESERA)	1	0.	23.3	16.10	.0
SUDAN	SAVANNAH DEVELOPMENT	1	1700.	38.2	26.70	6.4
SWAZILAND	AGRIC. I (R/D LIVESTOCK)	1	400.	17.1	11.60	3.4
TANZANIA	TABORA RURAL DEV.(R/DII)	1	600.	23.5	17.40	3.4
ZAIRE	COTTON REHABILITATION	1	200.	14.6	10.70	1.9

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TABLE 1 (Continued)

MONITORING AND EVALUATION OF
AGRICULTURE AND RURAL DEVELOPMENT PROJECTS IN
EAST AFRICA

FY / COUNTRY	NAME	PROJECTS WITH M/E	COST OF M/E $ 000	TOTAL PROJECT COST US $MIL	TOTAL BASE COSTS US $MIL	M/E AS % OF BASE COSTS
78 AGRICULTURE						
BOTSWANA	LIVESTOCK II	1	900.	13.4	9.30	9.7
ETHIOPIA	GRAIN STORAGE&MARKETING	0	0.	34.6	27.20	.0
SUDAN	AGRIC.RESEARCH	1	150.	45.4	33.90	.4
	LIVESTOCK MARKETING	1	0.	51.3	39.50	.0
	MECHANIZED FARMING-III	1	200.	26.4	21.20	.9
TANZANIA	CASHEW NUTS II	0	0.	36.3	32.40	.0
	TOBACCO HANDLING	1	0.	20.7	15.30	.0
ZAIRE	OIL PALM DEVELOPMENT I	0	0.	47.4	32.40	.0
RURAL DEV.						
LESOTHO	RURAL DEVT. II	1	0.	26.4	19.70	.0
MALAWI	SHIRE CONSOLIDATION	1	300.	12.6	10.20	2.9
TANZANIA	RURAL DEVT III	1	400.	30.5	22.00	1.8
79 AGRICULTURE						
KENYA	NAROK MIXED FARMING	1	0.	18.9	13.60	.0
	SUGAR PRODUCTION II	1	0.	139.0	97.60	.0
ZAMBIA	COFFEE TECHNICAL ASSISTANCE	1	100.	8.3	6.40	1.6
RURAL DEV.						
BURUNDI	FORESTRY	1	100.	8.8	5.70	1.8
KENYA	SMALLHOLDER COFFEE IMP	1	200.	62.2	48.00	.4
MADAGASCAR	MANGOKY AGRIC DEVT	1	0.	29.4	21.30	.0
MALAWI	NATIONAL RURAL DEVT.	1	500.	66.0	52.40	1.0
RWANDA	RURAL DEVT. MUTARA-II	1	220.	11.8	8.70	2.5
SOMALIA	CENTRAL RANGELANDS DEVT	1	0.	46.3	33.50	.0
	EXTENSION & TRAINING	1	700.	32.4	24.90	2.8
SUDAN	CROP AND LIVESTOCK-SOUTH	1	3000.	55.9	44.70	6.7
*TOTAL		39	12750.	1901.1	1423.50	

1/ The presence of M&E components is indicated by 1; the absence by 0.

2/ Figures are given only for those M&E components that were costed at time of appraisal.

3/ Zero indicates that the M&E component was either absent or not costed at time of appraisal.

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OPENING ADDRESS BY MR. JOSEPH MULIRO

PERMANENT SECRETARY, MINISTRY OF AGRICULTURE, KENYA

Regional Workshop on Monitoring and Evaluation
of Rural Development Programs--April,1979

On behalf of the Kenya Government, it is my pleasure to welcome the delegates from other countries in Africa to this conference on monitoring and evaluation of rural development programs. I believe this is a first such conference to be held in Africa and we are pleased that you have chosen Kenya as your meeting place. We are happy that these working sessions are taking place here because we expect our own monitoring and evaluation program to benefit considerably from these discussions.

We would like to thank the World Bank for organizing and sponsoring this conference and for the larger role they have assumed to introduce monitoring and evaluation systems in all rural development programs they are supporting. We would like to express our appreciation specifically to Mr. Ted Davis, Head of the Monitoring and Evaluation Division of the Bank, and his staff for their assistance in developing our own program. It is our hope that during these meetings all of you will become familiar with the monitoring and evaluation program we have introduced in our Integrated Agricultural Development Program in Kenya.

For many years agricultural development proceeded on the assumption that if programs were well planned and implemented we could have confidence in our predictions of the results. However, experience has shown that there are many unanticipated factors in rural and agricultural development that can cause even the best planned programs to perform in ways that were not

anticipated. Some of the unknown factors could be connected with situations such as ecology, climatic conditions, differences in farming systems, lack of infrastructure, the level at which the rural people are motivated, technological standards, coordination, availability of required resources, etc. This makes it essential that we know in detail what the response is to development initiatives at every stage of their implementation.

In recent years we have all become more concerned to ensure that the benefits of agricultural development reach the low income small farmer. This is of such importance that poverty alleviation has been made the primary objective of the 4th Kenya Development Plan just introduced. While poverty alleviation and small holder agricultural development are key objectives to achieving the type of society we want, the problems of implementing programs to achieve these goals are tremendous. The challenge of these programs is to develop new management systems for agricultural development that are adequate to this task. For this purpose monitoring and evaluation is an essential management tool. Only if there is continual feed-back from the rural areas that provides program managers with the information they need to make key alterations in operations and strengthen implementation systems in response to experience, we can hope for success.

Research staff must receive specific data on the performance of the technological package provided for small farmers and make improvements as needed to ensure adoption of improved techniques. Your task this week is to help us strengthen our systems for providing that flow of information from the farm level back to program managers and research officials.

I am pleased that this conference brings together program managers, research scientists and specialists in the techniques of monitoring. Your intention not to focus exclusively on monitoring technques, but to give equal weight to the links between the technical monitoring staff and the program managers recognizes a crucial truth.

No matter how effective the monitoring is, unless the results are carefully analyzed and prepared in such a fashion that they can guide the program manager, they are of no value. Likewise, the program manager must fully understand the monitoring system so that he is confident in the results it provides him. This conference will enable program managers and the technical staff to sit and work together for several days away from the pressures of daily responsibilities and thereby strengthen these crucial links. These discussions will help the managers understand the intracacies of monitoring systems and will enable the technical staff to better understand the requirements of the manager. This should result in a considerable strengthening of monitoring and evaluation systems.

Monitoring and evaluation is presently associated with specific projects. However, it must become part of our manager capability in the agriculture sector over the longer term. We are very grateful for the technical assistance that we are receiving in this area. We must also remember that since it is to be a permanent part of our management systems, the objective of Africanization must be given highest priority.

I hope that in your discussions, ways in which national staff can gain experience and formal training in the techniques in the monitoring and evaluation will receive considerable attention. We are pleased that our

system in Kenya is under the direction of a very able Kenya officer and that a second officer who helped establish the system will return with advanced training in this area in the next few months. We hope similar progress is being made in other countries.

In conclusion, I would like to reiterate our cordial welcome to all of you from other countries and wish you a very productive week in this conference. I shall look forward to receiving a detailed report on the progress you made and to the benefits which these meetings will have for our monitoring and evaluation activities in the Ministry of Agriculture here in Kenya.

I now have the privilege of declaring this conference open.

BASIC CONCEPTS ON MONITORING AND EVALUATION

A measure of the success of a project is the extent to which the goals, objectives, and planned benefits are realized through project implementation. This requires the generation and analysis of information on project inputs and results. For this purpose, a variety of information generation and reporting systems can be used. These information tools can generally be defined as management information systems which may include a general and cost accounting, internal auditing, management reporting, monitoring and evaluation.

A management reporting system is necessary to obtain a continuous information flow on the financial and physical progress of the project and its components. It consists of an Internal Reporting System and an External Reporting System. Internal reporting refers to the information flow from the project area to the (central) project management. External reporting refers to the information flow from project mangement to the management of other government and international agencies (such as the Bank which requires its borrowers to report regularly on project progress). A management reporting system should produce information on inputs, activities (their actual starting date, duration and completion as compared with the planned schedule), and outputs. The reporting system should furnish each manager with all the information and only that information which he needs for managing the project. He should receive such information when he needs it and in the form that he can easily understand and that stimulates the appropriate actions.

In order to verify measurable project objectives, to see if these are met and, if not, that appropriate action is taken on problems encountered, monitoring and evaluation systems may be included in a project. It is therefore essential to distinguish between:

(i) Project Inputs - These are the resource quantities necessary for a project such as capital, manpower, and technology required to irrigate a certain number of hectares of land;

(ii) Project Outputs - These are the physical outcome of the project inputs such as the number of hectares actually irrigated;

(iii) Project Effects - These are the outcome of the use made of the project outputs such as the agricultural yields per hectare of land irrigated;

(iv) Project Impact - These are the changes in living standards resulting from the project effects such as an increase in farmer's income.

Monitoring of project progress focuses primarily on "what" is or is not happening (i.e. project inputs and outpus), while evaluation, either during or after project implementation, would aim at explaining "why" project outputs, effects and/or impact were or were not achieved.

Monitoring can thus be defined as the timely gathering of information on project inputs, outputs, and complementary activities that are critical to the attainment of the objectives of the projects. It utilizes baseline information collected during the design and preparation phase, and continues throughout the project's lifetime when it compare actual inputs, outputs

and activities with the expected or planned levels. It alerts project management and policy makers to potential implementation problems requiring corrective action. It may also provide the necessary information for the instigation and preparation of ongoing evaluation.

As defined above, monitoring emphasizes how information is channeled to the project management for decision-making. The major function of monitoring is the control of sound progress of implementation of the project. To be effective, monitoring must provide quick feedback to project management.

Monitoring overlaps extensively with the management reporting system since it relies partially on the information produced by the internal management reports. However, it often requires the generation of additional information on the project implementation. The results of monitoring are often reflected in the project management's external reports to the management of other agencies.

While monitoring and reporting overlap considerably, monitoring goes further in that it analyzes and recommends actions to correct deviations from planned results. Often it requires diagnosis of implementation problems and generation of additional information through interviews, field observations, discussions with project staff, special studies, etc. To maximize implementation effectiveness monitoring requires early warning of project management about problems, together with recommendations for corrective actions.

Monitoring requires a simple system that provides continuous feedback of key indicators on project progress. It should be based on simple approaches for collection of the absolute minimum information that can be cheaply and easily collected on time for quick feedback to the project management.

Evaluation, on the other hand, is the comparison of actual project effects and impacts against the established plans. It can either be ongoing or expost. Ongoing evaluation is an analysis during project implementation of project outputs and effects. The purpose of ongoing evaluation is to provide information on a continuing basis to project management and policy makers to enable them to assess, and if necessary, adjust policies, objectives, institutional arrangements and resources affecting the project during implementation. Expost evaluation is an analysis after project completion of the project effects and impact. The purpose of expost evaluation is to provide policymakers with information for future planning of projects or programs.

As defined above, evaluation assesses the extent to which the planned project effects and impacts have been realized. It tries to determine whether the planned benefits envisioned for the project are being achieved, and how they are distributed. While evaluation relies extensively upon the reporting and monitoring systems, it requires additional information (data which are not routinely gathered) through surveys, interviews, and observations. Often it covers selected project components over a long time span or concentrates on particular critical issues.

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Number	Name	Title
RWME/01/01	A.O. Abikar	A Case Study on the North West Region Agricultural Development Project: Somalia
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RWME/01/04	A. Duncan	Monitoring and Evaluation in Mixed Farming and Livestock Systems: the Experience of the Southern Sudan Agricultural Rehabilitation Project
RWME/01/05	A.G.K. Mwakatundu	A Case Study of the Tanzania Dairy Phase I Project
RWME/01/06	E.N. Mbuya	Experiences of Management of Tabora Rural Integrated Development Project
RWME/01/07	A.A. Farah	Progress of the Trans-Juba Livestock Project
RWME/01/08	K. Swanberg	A Case Study of the Integrated Agricultural Development Programme Phase II
RWME/01/09	G.K. Mburathi	Integrated Agricultural Development Programme Phase II
RWME/01/10	J.K. Gachui	The Data Collection System Used for the Integrated Agricultural Development Programme
RWME/01/11	H.E. Jahnke	Monitoring Livestock Development Projects: The Approach of the International Livestock Centre for Africa

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RWME/01/12/A	Ministry of Agr. and Natural Resources, Malawi	Background Paper on the National Rural Development Programme (NRDP) in Malawi
RWME/01/12/B	World Bank	The National Rural Development Programme in Malawi: Concept, Objectives and Strategy
RWME/01/13	Central Bureau of Statistics Kenya	Monitoring and Evaluation of Rural Development Projects with Particular Reference to the Rural Access Road Programme in Kenya
RWME/01/14	F.R. Mwambaghi	Lakeshore Rural Development Project: Developments in Monitoring and Evaluation
RWME/01/15	N.K.S. Sichinga	Namwera Rural Development Project: Background Paper
RWME/01/16	S. L. Atkins	Lilongwe Land Development Programme: A Case Study of Reporting, Monitoring and Evaluation at Project Level
RWME/01/17	A.A.B. Standen	Lilongwe Agricultural Development Division/ Lilongwe Land Development Programme, Malawi
RWME/01/18	E.F. Ching'anda	Survey Methodology and Costs of Data Collection, Agro-Economic Survey Unit, Malawi
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RWME/01/22	J.E. Doughty	The Reporting, Monitoring and Evaluation System for the National Rural Development Programme (NRDP) in Malawi
RWME/01/23	Tesfa Guma	Monitoring and Evaluation of Rural Development Projects: A Background Paper for Regional Workshop - IBRD, East Africa
RWME/01/24	Victor Burke	The Monitoring of Rural Development Projects
RWME/01/25	John Yearwood	Towards Establishing a Centrally Coordinated Agricultural Planning, Monitoring and Evaluation System in Sierra Leone

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